

Applicant: Cundy et al.
Application No.: Not Yet Known

IN THE CLAIMS

Please amend the claims, without prejudice, as follows:

1. (Original) An electrokinetic method for groundwater protection, soil remediation and/or soil engineering which comprises applying an electric field between iron-rich sacrificial electrodes, which are implanted in an area of water-bearing soil, sediment or slurry so as to generate an abrupt pH and Eh gradient from acid to alkaline conditions, with the spontaneous *in situ* precipitation of a stable iron-rich band occurring at the boundary between the acid and alkaline zones.
2. (Original) A method as claimed in claim 1, wherein the pH gradient is from pH2 to pH13.
3. (Currently Amended) A method as claimed in claim 1 ~~or claim 2~~, wherein the current is applied between one or more pairs of electrodes inserted in the area of soil, sediment or slurry.
4. (Original) A method as claimed in claim 3, wherein the electrodes are made of cast iron, scrap iron, stainless steel or other iron-rich material.

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5. (Currently Amended) A method as claimed in claim 3 or claim 4, wherein the voltage employed is less than 0.5 volts per cm of the distance between a pair of electrodes.

6. (Currently Amended) A method as claimed in ~~any one of the preceding claims~~ claim 1, wherein the soil, sediment or slurry contains organic, inorganic and/or radioactive contaminants.

7. (Currently Amended) A method as claimed in ~~any one of the preceding claims~~ claim 1, wherein the iron-rich band acts as a physical and/or chemical barrier to contaminants present in the soil, sediment or slurry.

8. (Currently Amended) A method as claimed in ~~any one of the preceding claims~~ claim 1, where iron is precipitated to form an impermeable coherent band, or a coating which cements soil/sediment particles, or a dispersed coating on mineral grains, between two or more electrodes.

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9. (Currently Amended) A method as claimed in ~~any one of the preceding claims~~ claim 1, wherein the generation of the pH/Eh gradient mobilises, remobilises and/or traps contaminants present in the soil, sediment or slurry.

10. (Currently Amended) A method as claimed in ~~any one of the preceding claims~~ claim 1, which is performed for the purpose of the stabilisation and/or strategic dewatering/rewatering of soils, sediment and/or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, the forced and directed migration of contaminated leachates, and/or electro-osmotic purging of non-polar contaminants.

11. (New) A method as claimed in claim 2, wherein the current is applied between one or more pairs of electrodes inserted in the area of soil, sediment or slurry.

12. (New) A method as claimed in claim 4, wherein the voltage employed is less than 0.5 volts per cm of the distance between a pair of electrodes.

13. (New) A method as claimed in claim 2, wherein the soil, sediment or slurry contains organic, inorganic and/or radioactive contaminants.

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14. (New) A method as claimed in claim 3, wherein the soil, sediment or slurry contains organic, inorganic and/or radioactive contaminants.

15. (New) A method as claimed in claim 4, wherein the soil, sediment or slurry contains organic, inorganic and/or radioactive contaminants.

16. (New) A method as claimed in claim 2, which is performed for the purpose of the stabilisation and/or strategic dewatering/rewatering of soils, sediment and/or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, the forced and directed migration of contaminated leachates, and/or electro-osmotic purging of non-polar contaminants.

17. (New) A method as claimed in claim 3, which is performed for the purpose of the stabilisation and/or strategic dewatering/rewatering of soils, sediment and/or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, the forced and directed migration of contaminated leachates, and/or electro-osmotic purging of non-polar contaminants.

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18. (New) A method as claimed in claim 4, which is performed for the purpose of the stabilisation and/or strategic dewatering/rewatering of soils, sediment and/or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, the forced and directed migration of contaminated leachates, and/or electro-osmotic purging of non-polar contaminants.

19. (New) A method as claimed in claim 5, which is performed for the purpose of the stabilisation and/or strategic dewatering/rewatering of soils, sediment and/or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, the forced and directed migration of contaminated leachates, and/or electro-osmotic purging of non-polar contaminants.

20. (New) A method as claimed in claim 6, which is performed for the purpose of the stabilisation and/or strategic dewatering/rewatering of soils, sediment and/or slurries, the improvement of the physical properties of soils and sediments for engineering purposes, the forced and directed migration of contaminated leachates, and/or electro-osmotic purging of non-polar contaminants.